Running Head: Mindfulness Meditation Reduces Egocentrism

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The Observing Self:

Diminishing Egocentrism Through Brief Mindfulness Meditation

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Abstract

Reflecting the egocentrism that permeates contemporary society, people often believe they stand out in the eyes of others (i.e., the *spotlight effect*), a conviction that is entirely misplaced. Although considerable efforts have focused on elucidating the consequences of the spotlight effect, much less is known about factors that may attenuate this illusory perception. Accordingly, the current study explored the possibility that, via shifts in perspectives on the self (i.e., first-person vs. third-person), brief mindfulness-based meditation may reduce a future-oriented variant of this bias. The results revealed that, compared to responses in the control conditions (i.e., control meditation or no mediation), brief mindfulness-based meditation fostered the adoption of a third-person vantage point during mental imagery and diminished perceptions of personal salience.

Keywords: egocentrism, mental imagery, visual perspective, mindfulness

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The contention that societies are becoming increasingly self-centered seems well founded. In North America, cultural products such as books, pop songs, and presidential addresses display decade-on-decade increases in egocentrism (Chopik, Joshi, & Konrath, 2014; DeWall, Pond, Campbell, & Twenge, 2011). Daily life is similarly littered with self-centric outputs. For example, people routinely overestimate the extent to which others share their beliefs and opinions (Ross, Greene, & House, 1977), assume others have greater access to their internal states than is actually the case (Gilovich, Savitsky, & Medvec, 1998), and take undue credit for collaborative outcomes (Ross & Sicoly, 1979). Egocentric outputs are believed to originate from failures in the process of anchoring and adjustment (Tversky & Kahneman, 1974). Although readily conceding that the world may not be quite as it seems, people fail to make appropriate adjustments (i.e., corrections) from the powerful anchor of their own first-person phenomenological experiences (Epley & Gilovich, 2004). As a result, egocentrism prevails.

Ironically, just as the character of subjective experience promotes egocentrism, so too it can potentially reduce this mode of thought (Duval & Wicklund, 1972; Piaget, 1926). The solution, advanced by a host of influential theorists, is simply to switch viewpoints and adopt a third-person perspective when imagining the self — in other words, see oneself as others do. According to Piaget (1926), egocentrism is diminished when people shift attention from the external world and focus instead on the self from the vantage point of others, a shift in perspective that reflects the capacity to characterize the self from either a first-person (i.e., actor) or third-person (i.e., observer) viewpoint (Duval & Wicklund, 1972; Libby & Eibach, 2011; Macrae et al., 2015; Pronin & Ross, 2006). The trick to diminishing egocentrism is therefore to identify factors that promote third-person self-construal (see Libby & Eibach, 2011; Trope & Liberman, 2003, 2010).

One intriguing way in which vantage-point shifts in self-construal (i.e., first-person to third-person) may be triggered is via mindfulness-based meditation (Kabat-Zinn, 1990). Emphasizing the non-judgmental appraisal of present-moment thinking (see Bishop et al., 2004), mindfulness has been shown to exert significant influence on cognition and behavior (Hölzel et al., 2011). For example, mindfulness interventions have been shown to remediate a range of problems, including depression, substance abuse, cravings, and anxiety (Alberts, Mulkens, Smeets, & Thewissen, 2010; Breslin, Zack, & McMain, 2002; Shapiro, Schwartz, & Bonner, 1998; Teasdale, 1999; Zeidan, Gordon, Merchant, & Goolkasian, 2010). In addition, and of relevance to the current investigation, even brief (i.e., 5-12 min), experimentally induced periods of mindfulness impact psychological functioning; notably emotional reactivity, impulsivity, and empathizing/mindreading (e.g., Erisman & Roemer, 2010; Papies, Barsalou, & Custers, 2012; Papies, Pronk, Keesman, & Barsalou, 2015; Tan, Lo, & Macrae, 2014).

Notwithstanding an explosion of interest in mindfulness both inside and outside the laboratory, quite how this practice influences behavior remains largely unknown (Hölzel et al., 2011; Malinowski, 2013). To date, a modest literature has delineated the cognitive and neurophysiological processes through which mindfulness operates with emphasis falling on the manner in which meditative experiences moderate attentional/motivational control (Baer, 2003; Brown & Ryan 2003; Lutz, Slagter, Dunne, & Davidson, 2008; Moore, Gruber, Derose, & Malinowski, 2012; Papies et al., 2015; Shapiro, Carlson, Astin, & Freedman, 2006; Tang et al., 2007; Teper & Inzlicht 2013). Extending research of this kind, one additional — though as yet untested — mechanism of mindfulness meditation is that it fosters a change in self-perspective (Hölzel et al., 2011). Specifically, mindfulness influences the visual perspective from which self is construed (Libby & Eibach, 2011).

According to Hölzel et al. (2011), mindful, non-judgmental observation fosters a detachment from the contents of consciousness, a process termed ‘reperceiving’ or ‘decentering’ (Carmody,

Baer, Lykins, & Olendzki, 2009; Epstein, 1988; Olendzki, 2006; Shapiro et al., 2006) that triggers adoption of an observer-based (i.e. third-person) perspective of the self (Kerr, Josyula, & Littenberg, 2011), precisely the vantage point that is believed to diminish egocentrism. Echoing Piaget's (1966) ideas, objective self-awareness theory (Duval & Wicklund, 1972) contends that people become less egocentric when they turn their attention from the external world and focus instead on themselves from the perspective of others. Termed the *looking glass self* by Cooley (1902), this shift in experiential awareness (i.e., first-person to third-person) serves to contextualize behavior and diminish self-centric thinking. Critically, mindfulness-based meditation is postulated to elicit just such a shift in self-construal (Hölzel et al., 2011). As Shapiro et al. (2006, p. 377) report, "mindfulness…involves a fundamental shift in perspective. Rather than being immersed in the drama of our personal narrative or life story, we are able to stand back and simply witness it." In this way, through a switch from first-person to third person imagery, mindfulness-based meditation may provide a pathway through which egocentric judgments can be reduced.

Preliminary evidence to suggest that mindfulness meditation triggers a shift in self-construal comes from a diary study (Kerr, Josyula, & Littenberg, 2011). During an 8-week Mindfulness-Based Stress Reduction (MBSR) program (Kabat-Zinn, 1990), participants were required to report changes in the character of their inner experiences. Aside from improving the clarity of their experiential descriptions, mindfulness also facilitated the emergence of what has been termed the observing self (Deikman, 1983) — specifically, a third-person vantage point during self-construal (Shapiro et al., 2006). Given therefore the suggested relationship between mindfulness and visual perspective (Hölzel et al., 2011), here we explored the possibility that a brief period of mindfulness meditation may reduce a common manifestation of egocentrism, the *spotlight effect*. A well-documented phenomenon in social psychology, the spotlight effect reflects people's tendency to overestimate the extent to which others notice and attend to aspects of their appearance and behavior (Gilovich, Kruger, & Medvec, 2002; Gilovich, Medvec, & Savitsky, 2000).

Pioneered by Gilovich and colleagues, initial investigations of the spotlight effect explored people's reactions to wearing items of clothing (Brown & Stopa, 2007). In one set of studies (Expts. 1 & 2), participants sporting a t-shirt with an embarrassing logo (e.g., an image of Barry Manilow) walked in on a group of individuals who were completing questionnaires. Afterwards, when asked to report how many people noticed the t-shirt, participants significantly overestimated the number, an effect that also emerged when they were required to wear a desirable garment (e.g., Martin Luther King t-shirt). Aside from items of attire, egocentric judgments also arise when people's behaviors are the target of interest. In another study (Gilovich et al., 2000; Expt. 3), members participating in a discussion overestimated the salience of both their positive (e.g., advancing the discussion) and negative (e.g., offending someone) contributions to the group exchange. Beyond a peculiar facet of self-perception, the spotlight effect has far reaching implications for daily life and psychological wellbeing. Presuming that one is disproportionately visible and memorable can be a significant source of stress and anxiety (Brown & Stopa, 2007).

As it turns out however, believing that one stands out in the eyes of others is an egocentric illusion, driven by the powerful influence of first-person experiences (i.e., if it looks or seems obvious to me, it must be obvious to everyone, see Epley & Gilovich, 2004; Kerr et al., 2011; Shapiro et al., 2006). As such, it is a promising candidate for judgmental recalibration via shifts in self-construal, a possibility we explored in a variant of the traditional spotlight paradigm. While, as noted, prior research has revealed that the social spotlight shines brightly when judging one's salience in the past (i.e., 'retrospective' spotlighting), it is unclear if perceptions of events or experiences that have yet to occur are similarly laced with egocentric thinking (i.e., 'prospective' spotlighting; e.g., if I wear those silver pants at the party tonight will everybody notice me?). Given the inordinate amount of time people spend pondering their future selves (e.g., behavioral planning, affective forecasting), and the pivotal role that prospection plays in everyday life (Gilbert & Wilson, 2009; Seligman, Railton, Baumeister, & Sripada, 2013; Smallwood & Schooler, 2006;

Suddendorf & Corballis, 2007; Trope & Liberman, 2003; Szpunar, 2010; Wilson & Gilbert, 2003), this issue is of both theoretical and practical significance.

If, then, mindfulness triggers the emergence of a third-person vantage point (Hölzel et al., 2011; Kerr et al., 2011; Shapiro et al., 2006), a straightforward prediction arises — brief mindfulness meditation may reduce the salience of the future self. To explore this possibility, following a brief period of mindfulness-based meditation (see Tan et al., 2014), participants (i.e., predictors) were required to imagine wearing a t-shirt with a distinctive design (i.e., an image of the controversial celebrity Miley Cyrus), while chatting with some friends, prior to entering a classroom on campus in the coming week. During the conversation, 40 students walked past the group and entered the room. On completion of the guided imagery, participants were asked to estimate how many of the students entering the classroom noticed their t-shirt. We expected estimates of personal salience to be attenuated following a brief period of mindfulness (vs. control) meditation, reflecting a reduction in egocentrism via vantage-point shifts in self-construal. To obtain baseline data pertaining to the actual salience of the target event, additional participants (i.e., experiencers) walked past a confederate (wearing a Miley Cyrus t-shirt) chatting with friends outside a classroom on campus and were later probed for awareness of the confederate's t-shirt.

Method

Participants and Design

One hundred and sixty undergraduates took part in the research, 120 predictors (80 females, $M = 20.60$, $SD = 2.37$)[1] and 40 experiencers (30 females, $M = 20.50$, $SD = 1.62$). The experiment had a single factor (Meditation: mindfulness or control or none) between-participants design and was reviewed and approved by the School of Psychology Ethics Committee.

[1] An *a priori* sample size calculation (G*Power, f = 0.3, $\alpha = 0.05$, power = 0.8) revealed a requirement of 111 participants. An additional 10% were recruited to allow for drop out.

Materials and Procedure

Predictors (N = 120) were greeted by a female experimenter and told the research comprised an investigation into people's reactions to different types of thoughts and situations. The experimental manipulation was then introduced. Participants in the meditation conditions were instructed to close their eyes, relax, listen to scripted audio instructions (via headphones), and that a bell would chime after 5 minutes to signal the end of this activity. Based on prior research (Tan et al., 2014), participants in the mindfulness condition were instructed to pay particular attention to the sensation of their breathing during the 5-minute period. In addition, they were told it is quite natural for the mind to be distracted and attention to wander during such a task. However, they were asked to observe these moments as fleeting states of mind and to return attention to their breathing each time a distracting thought, emotion or memory occurred (Smith & Novak, 2003). Importantly, Tan et al. (2014) have shown that this 5-minute exercise triggers an increase in levels of state mindfulness (i.e., Mindful Attention Awareness Scale-State [MAAS-S], Brown & Ryan, 2003). Critically, no mention of visual perspective or self-construal was made during the audio instructions. Participants in the control condition received instructions that were similar in style and length. Contrasting the mindfulness treatment, however, these individuals were told to notice each thought, emotion and memory that may arise and to be completely immersed in the experience (Papies et al., 2012). A final group of participants received no meditation-related instructions.

Following the initial activity, all participants were informed that the next task entailed a brief period of mental imagery, after which aspects of their imaginary experience would be probed. The experimenter then explained that participants were required to imagine standing near the doorway outside a familiar classroom on campus in the coming week, chatting with a couple of friends, prior to entering the room. They were further informed that, while they chatted, 40 undergraduates would walk past them and enter the classroom. Participants were then shown a photograph of a t-shirt and instructed that they were to imagine wearing the item during the

imaginary episode. The t-shirt was white and depicted an image of Miley Cyrus. Once the instructions were fully understood, participants closed their eyes and spent 20 seconds imagining the event.

After the guided imagery was completed, participants were required to select, from two possibilities, the vantage point that best described the image they had formed of the event (Pronin & Ross, 2006): (i) I saw the scene from my original point of view (not as an external observer would see it). I did not see myself in the image, since it was as though I was looking at the event through my own eyes (i.e., actor's perspective); or (ii) I saw the scene as an observer might see it (not from my original point of view). I saw myself in the image, since it was as though I was looking at the event through the eyes of an observer (i.e., observer's perspective). Next, they were asked by the experimenter to estimate how many of the 40 students that entered the room noticed their Miley Cyrus t-shirt. Participants were then thanked, debriefed and dismissed.

Experiencers (N = 40) comprised members of a weekly undergraduate psychology course that was held in a classroom on campus. As they entered the room, observers passed 3 experimental confederates (2 females) chatting near the doorway, one of whom was wearing the Miley Cyrus t-shirt. While half of the observers passed a male confederate who was wearing the t-shirt, the others passed a female confederate. Prior to the commencement of the class, observers were approached individually and asked if they had noticed and could report the image on the confederate's t-shirt.

Results

Egocentrism

A single factor (Meditation: mindfulness or control or none) between-participants analysis of variance revealed that brief mindfulness-based meditation impacted estimates of how many people noticed the t-shirt, $F(2,117) = 10.38$, $p = .00007$, $\eta_p^2 = .15$. Post-hoc Tukey tests confirmed that, compared to both control meditation (M = 32%, SE = 4%) and no meditation (M = 36%, SE = 5%), brief mindfulness meditation (M = 13%, SE = 2%) reduced estimates of personal salience

(both *p*'s < .01). As 5 experiencers correctly reported the image on the t-shirt (i.e., 5/40 = 12.5%), this returned overestimates of 19.5%, 23.5%, and 0.5% in the respective conditions.[2]

Visual Perspective

A chi-square test of independence revealed a significant relation between Meditation and the visual perspective adopted during mental imagery, χ^2 (1, N = 120) = 12.2, p = .002. While simulations following brief mindfulness meditation were dominated by a third-person (i.e., observer) representation of the self, this switched to a first-person (i.e., actor) depiction in the control and no-meditation conditions (see Figure 1).

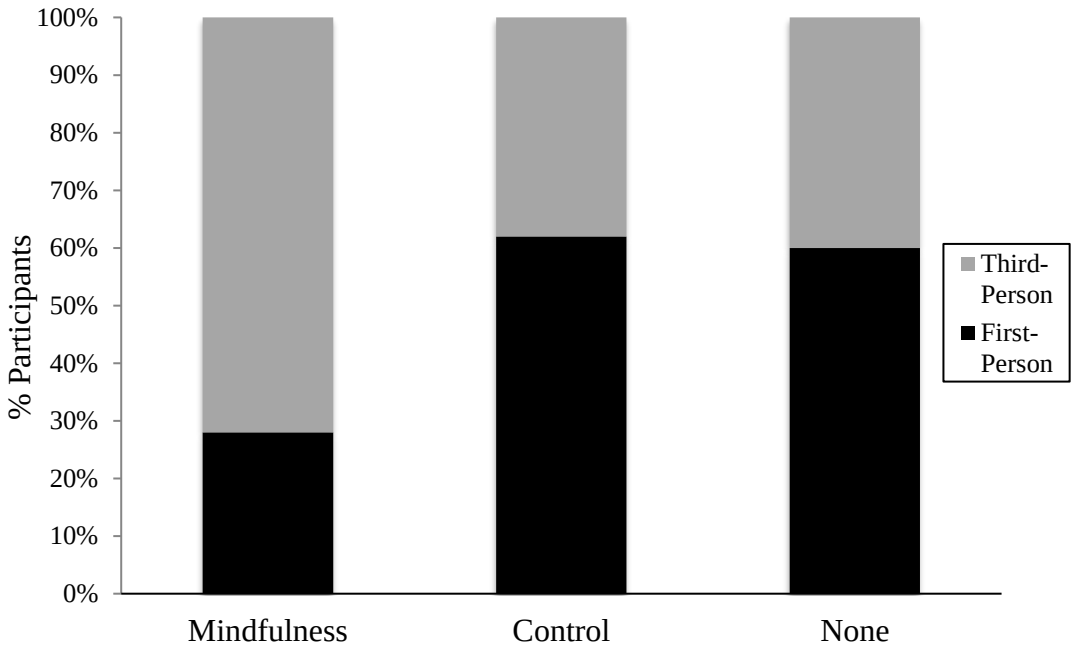

Figure 1. Visual perspective adopted as a function of condition.

[2] In the classic spotlight paradigm (Gilovich et al., 2000; Expt. 1), 23% of experiencers noticed an embarrassing t-shirt worn by participants.

Mediation by Visual Perspective

Regression analyses were undertaken to test whether visual perspective mediated the relation between Meditation and egocentrism (see Figure 2). We followed Hayes and Preacher's (2014) guidelines for calculating direct and indirect effects using a multicategorical predictor (see also Iacobucci, 2012). Specifically, indicator coding was used to examine the relative effects of mindful and control meditation relative to the no-meditation condition (i.e., reference group). Bootstrapping procedures (5000 re-samples) were used to test the significance of the indirect effects. These confirmed that mindfulness meditation exerted a significant indirect effect on egocentrism (indirect effect = -0.25; 95% bootstrapped confidence intervals, CI: [-.263, -.070]). No such effect emerged following control meditation (indirect effect = 0.02; 95% bootstrapped confidence intervals, CI: [-.157, .058]).

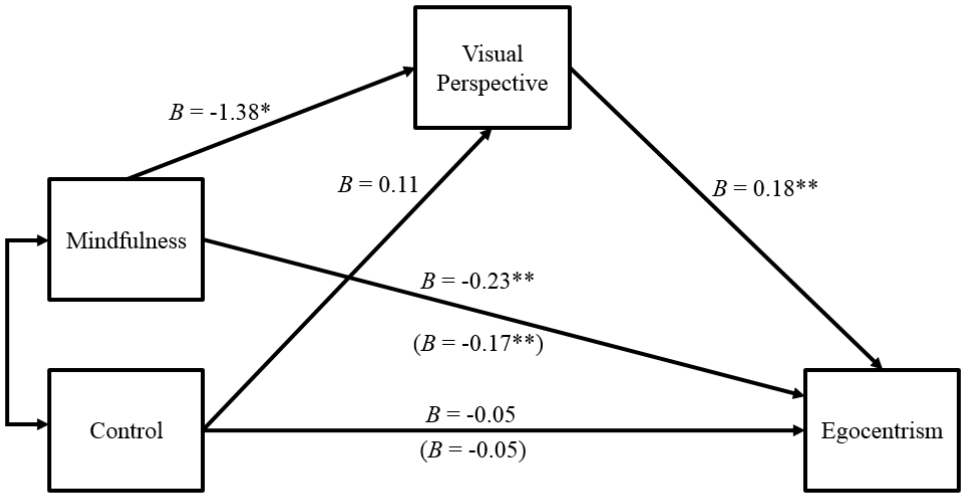

Figure 2. Visual perspective as a partial mediator of egocentrism. Numbers along the paths are unstandardized regression coefficients (*p < .005, **p < .001). Values in parentheses represent the indirect effect when the mediator is included in the model.

General Discussion

To facilitate social-cognitive functioning, people often rely on mental simulations that give a flavor or preview of how future events are likely to unfold (Dunning, 2007; Wilson & Gilbert, 2003; Smallwood & Schooler, 2006; Trope & Liberman, 2003). The value of this activity rests squarely on the extent to which these imaginary experiences capture and represent essential characteristics of the events in question (e.g., dates, interviews, dinner parties), as non-representative simulations elicit inaccurate outputs (e.g., predictions, forecasts, see Gilbert & Wilson, 2009). Of psychological interest, therefore, are factors that influence the structure and content of mental simulation. In the context of the salience of the future self, here we showed that brief mindfulness-based meditation attenuated the illusory belief that one is highly noticeable to others. It did so, moreover, via a shift in self-construal, thereby confirming the theoretical relation between visual perspective and egocentrism (Piaget, 1926).

The current findings are noteworthy for several reasons. First, they confirm that prospection (like retrospection) generates egocentric estimates of personal salience (Gilovich et al., 2000). Second, they demonstrate that the visual perspective adopted during mental imagery influences the magnitude of this effect (Libby & Eibach, 2011). Third, they identify a pathway through which brief mindfulness-based meditation influences cognition (Hölzel et al., 2011). Although mindfulness has been reported to produce beneficial effects both in clinical settings and among healthy individuals (Baer, 2003), exactly how this practice works remains something of a mystery. Confirming Hölzel et al.'s (2011) process-based account, here we showed that changes in self-perspective are a contributory component of mindfulness-based meditation. Specifically, non-judgmental observation of present moment experience fosters the adoption of an observer (i.e., third-person) viewpoint when contemplating the self (Kerr et al., 2011), a viewpoint that diminishes estimates of personal salience.

Mindfulness has been described as a state of consciousness in which there is enhanced attention to momentary experiences without judgment or elaboration (Brown & Ryan, 2003). Once an individual's attention is focused on present moment experience, the next step in mindfulness practice is to hold that experience with a stance of curiosity and openness. Thoughts, feelings, and bodily sensations are noticed and understood to be just thoughts, feelings, and bodily sensations rather than a stable reflection of the self (Coffey, Hartman, & Fredrickson, 2010). Once in a state of mindfulness, the benefits are many. In particular, rather than reacting instinctively in the moment, choices can be made about the best way to act (Bishop et al., 2004; Coffey et al., 2010). In this respect, brief inductions (i.e., 3-15 minutes in length) may have the advantage of isolating specific effects of mindfulness instructions (Papies et al., 2015), compared to interventions that comprise multiple active components. Representing one end of the mindfulness-training continuum, brief inductions may be considered the smallest treatment dose to assess the immediate impact of temporary mindful states. What remains to be seen, however, is how brief mindfulness-based meditation maps onto extended training experiences. Future research should address this issue.

Although it is unlikely that third-person imagery following mindfulness meditation is a panacea for people's judgmental frailties (Wilson & Gilbert, 2003), there are probably a number of settings/judgments for which adoption of this imagery perspective may enhance accuracy. Two prime candidates are the illusion of transparency and affective forecasting. A close relative of the spotlight effect, the illusion of transparency reflects people's tendency to overestimate the extent to which others can discern their internal psychological states (Gilovich et al., 1998; Savitsky & Gilovich, 2003). For example, while lying to a partner about the source of a salacious text message, people suspect their dishonesty is more obvious than is actually the case. Overpowered by the force of their own first-person phenomenological experiences, people erroneously assume their inner thoughts and feelings leak out and are apparent to others. Adoption of third-person imagery when mulling over future events may attenuate this bias.

Affective forecasting (i.e., emotional prediction) may likewise benefit from a third-person viewpoint (Emanuel, Updegraff, Kalmbach, & Ciesla, 2010). For example, work has revealed that students' affective reactions to a future event (i.e., speed dating) were more accurate when they knew how a fellow undergraduate reacted than when they had information about the event themselves. In other words, neighborly advice (i.e., an observer's viewpoint) trumps self-knowledge (Gilbert, Killingsworth, Eyre, & Wilson, 2009). Rather than go so far as to consult a colleague, however, affective forecasts may also be improved through the adoption of a third-person vantage point during event simulation. Simply put, less egocentrism may translate into enhanced self-appraisal, a possibility that awaits empirical consideration.

It is worth noting that adoption of a third-person vantage point may also potentially precipitate some unwanted outcomes. Most notable among these is the problem of self-objectification. Objectification theory (Frederickson & Roberts, 1997) seeks to understand the causes and consequences of bodily dissatisfaction that are so prevalent among women in Western society. According to the theory, self-objectifying women engage in habitual body surveillance (i.e., viewing their bodies from a third-person perspective), resulting in discontent, shame, and reductions in self-esteem. Given that mindfulness meditation encourages the adoption of an observer viewpoint (Kerr et al., 2011) might it therefore exacerbate self-objectification? Initial evidence would suggest not. In a recent study, Cox, Ullrich-Finch, Cole, and D'Hondt-Taylor (2016) investigated the effects of mindfulness (induced during yoga classes) on self-objectification. Interestingly, mindfulness was associated with a reduction in self-objectification and an increase in mood/enjoyment. Critical to the emergence of this effect is likely the non-judgmental, non-evaluative stance that is fostered through mindfulness-based meditation (Bishop et al., 2004; Brown & Ryan, 2003). That is, a third-person vantage point may be beneficial if it is accompanied by the non-judgmental appraisal of bodily awareness. Future research should consider this issue.

When considering the current findings, some observations are in order. Unlike the classic spotlight effect (Gilovich et al., 2000; Gilovich et al., 2002), the results reported here were

generated in an imaginary future setting. Nevertheless, there are several reasons to suspect that vantage-point differences during prospection should extend to judgments and behaviors in the real world (Gilbert & Wilson, 2007; Libby & Eibach, 2011). The benefits of future previews derive from overlap in the operations (neural & cognitive) that support mental simulation and actual behavior (Moulton & Kosslyn, 2009). Of relevance to the current inquiry, differences in vantage point influence the contents of prospection, such that first-person simulations contain more information pertaining to bodily sensations, affective reactions, and psychological states than events imagined from a third-person perspective (e.g., Christian, Parkinson, Macrae, Miles, & Wheatley, 2015; Lorey, Bischoff, Pilgramm, Stark, Munzert, & Zentgraf, 2009; Macrae, Raj, Best, Christian, & Miles, 2013; Miles, Christian, Masilamani, Volpi, & Macrae, 2013). What this then suggests is that forecasts or predictions susceptible to egocentric bias should be most pronounced when simulations are generated from a first-person vantage point. For example, when imagining wearing a Miley Cyrus t-shirt, feelings of embarrassment should be elevated during first- compared to third-person imagery (Christian et al., 2015). That is, it is not simply adoption of a third-person vantage point per se that diminishes egocentrism, but also the attenuated psychological reactions that accompany this form of self-construal (e.g., self-distancing, see Kross, 2009; Lebois et al., 2015).

Whether through a coffee-stained shirt, unintelligible accent, or missing tooth, believing that one will stand out in the eyes of others can be a disagreeable, anxiety-provoking experience (Brown & Stopa, 2007). Here however we demonstrated the malleability of this belief by revealing attenuated estimates of future salience following brief mindfulness-based meditation. Seeing oneself as others do reduces the glare of the social spotlight.

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